

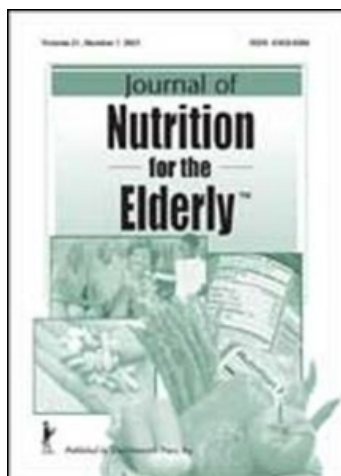
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## Journal of Nutrition For the Elderly

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title-content=t792306906>

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Online Publication Date: 01 January 2009

**To cite this Article** Bowman, Shanthy A. (2009) 'Socioeconomic Characteristics, Dietary and Lifestyle Patterns, and Health and Weight Status of Older Adults in NHANES, 1999-2002: A Comparison of Caucasians and African Americans', *Journal of Nutrition For the Elderly*, 28:1, 30 — 46

**To link to this Article:** DOI: 10.1080/01639360802633938

**URL:** <http://dx.doi.org/10.1080/01639360802633938>

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# Original Research

## **Socioeconomic Characteristics, Dietary and Lifestyle Patterns, and Health and Weight Status of Older Adults in NHANES, 1999–2002: A Comparison of Caucasians and African Americans**

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*There are disparities among older Caucasian and African American adults in many areas. The study used data from the National Health and Nutrition Examination Survey conducted from 1999 to 2002 and compared the self-reported dietary intakes, physical activity, and economic and health status of Caucasian (N = 1,398) and African American (N = 354) adults aged 65 years and older. Regression models and t-tests ( $\alpha = 0.05$ ) were used for comparisons. More African Americans than Caucasians lived in low-income households (40.4% vs. 21.3%), lived in households that were not fully food-secure (15.6% vs. 4.9%), watched five or more hours of television (34% vs. 20%), and were told that they had diabetes (10% vs. 4%) or high blood pressure (67% vs. 52%). They consumed 253 fewer calories than Caucasians. About 75% of African American women were overweight. Our findings indicate that for those greater than 65 years of age, low-income African Americans are at a greater risk for poor nutrition and chronic health conditions than Caucasians.*

**KEYWORDS** *African Americans, body mass index, Caucasians, energy, food intake, micronutrients, obesity, older adults, physical activity, television*

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## INTRODUCTION

Older adults aged 65 years and older represent about 12% of the U.S. population, and their number is expected to continue to increase to 71.5 million in 2030, representing about 20% of the total population (1). This increase will be seen across all races. The African American population in this age group is projected to increase from the current 9% to 12% in 2050 (1). Good nutrition and continued access to health care are essential for maintaining high quality of life during the later years of life. However, there are disparities in the economic and health status among racial and ethnic groups (1). Economic status impacts food purchase (2–6) and hence could impact nutritional status and health status of older adults. In the National Health Interview Survey, 2000–2002, 76% of non-Hispanic whites and only 59% of non-Hispanic blacks aged 65 years and older reported having good to excellent health (7).

Being overweight and obese are among the leading health indicators of chronic disease and certain types of cancers (8–11). Obesity may also lead to disability (12). Adequate nutrition and physical activity at older ages are necessary to maintain good health and to prevent the onset of disability and cognitive decline in older adults (13,14). Understanding the dietary and physical activity practices of older adults will help identify areas for nutrition and physical activity interventions that may help in the prevention of chronic disease and can increase quality of life in later years.

In general, literature on older adults' nutrient and dietary intakes is limited (15–27). Many of the studies are community-based (15–24), and only a few are nationally representative (25–27). These studies address relationships between specific nutrients and health, nutrient requirements, fruits and vegetable intakes, and snacking patterns. Very few studies focus on race ethnic differences (21) and both dietary and physical activity status of older Americans (28).

This study focuses on African American and Caucasian adults aged 65 years and older in the National Health and Nutrition Examination Survey (NHANES) that was conducted from 1999 to 2002 by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS) (29–32) and provides an analysis of the differences between the two groups. The study objectives are (1) to compare the socioeconomic, lifestyle, and health status of Caucasian (non-Hispanic whites) and African American (non-Hispanic blacks); (2) to examine their food and nutrient intakes; and (3) to compare their body weight status.

## METHODS

The federal government conducts nationally representative dietary surveys as part of its nutrition-monitoring activities. One of the major objectives of the

NHANES is to study the relationship between diet, nutrition, and health (30,32). The NHANES survey design is a stratified, multistage probability sample of the civilian, noninstitutionalized U.S. population. The stages of sample selection are as follows: selection of Primary Sampling Units (PSUs), which are counties or small groups of contiguous counties; selection of segments within PSUs that consist of a block or group of blocks containing a cluster of households; selections of households within segments; and selections of one or more participants per household.

The present analysis included 1,398 Caucasian adults and 354 African American adults aged 65 years and older who had complete and reliable dietary intake data on day 1 of the survey. The dietary data were collected using an interviewer-assisted, 24-hour recall method.

The socioeconomic characteristics used in this study included sex (male and female), household income (low income: less than 131% of poverty; medium income: 131%–350% of poverty; and high income: more than 350% of poverty), education level (less than high school level, high school completed, more than high school level education), household food security status (fully food secure, marginally food secure, food insecure without hunger, and food insecure with hunger), marital status (married, widowed, divorced, separated), and housing characteristics (house type and house ownership). The weighted percentages of Caucasians and African Americans in each socioeconomic category were estimated and compared using *t*-tests at  $\alpha = 0.05$  level of significance.

Mean energy, macronutrient, and selected micronutrient intakes of men and women in the two racial groups were analyzed, and comparisons were made within sex using *t*-tests at  $\alpha = 0.05$  level of significance. Multiple regression models that controlled for variations in age, gender, and household income were used to estimate mean energy and macronutrient intakes. Comparisons were made between races.

Mean food-group intakes of men and women were estimated, and comparisons were made using *t*-tests at  $\alpha = 0.05$  level of significance. Percentages of total energy intake obtained from each food group were estimated because food prices influence food choices and consequently impact energy sources in the overall diet (33–35).

Three different variables were used to assess self-reported activity levels. The first question asked the respondents which of the four statements best described their usual daily activities on a typical day: sit during the day and not walk about very much, stand or walk about a lot during the day but not have to carry or lift things very often, lift light loads or have to climb stairs or hills often, or do heavy work or carry heavy loads. The second question on activity level asked the respondents, compared with most persons of their age and gender, how active they would say they were (more active/less active, or about the same). The third question addressed the activity level of respondents over the past 30 days. The respondents were asked about

how much time on a typical day they spent sitting and watching television or videos or used a computer outside work. Other characteristics, such as whether the respondents were current smokers and whether a doctor had ever told them that they had health conditions such as diabetes, high blood pressure, or high blood cholesterol, were also analyzed. The weighted percentages of African Americans and Caucasians in each group were estimated and compared using *t*-tests at  $\alpha = 0.05$ .

Height and weight of individuals were measured in the NHANES 1999–2002. Mean body mass index (BMI, weight in kg/height in meter<sup>2</sup>) values and percent overweight (having BMI  $\geq 25$ ) men and women were estimated and compared using *t*-tests at  $\alpha = 0.05$ .

The NHANES oversampled low-income persons, adolescents 12–19 years, individuals 60 years and older, African Americans, and Mexican Americans. Therefore, survey design effects (including survey weights) were used in the data analyses so that the results would be nationally representative of the population subgroups studied. Therefore, all statistics reported in this article are weighted to nationally represent the study population. SAS-Callable SUDAAN software (SAS-Callable SUDAAN, release 9.0.1, Research Triangle Institute, Research Triangle Park, North Carolina, USA) was used for analyses.

## RESULTS

There were about 42% women and 58% men in each race group (Table 1). About one-fifth of Caucasians and twice as many African Americans lived in low income households (21.3% vs. 40.4%). In addition, a higher percentage of African Americans (41.3%) than Caucasians (28.2%) had less than a high school level education. Only one-eighth of African Americans, as compared with about one-fourth of Caucasians, had more than a high school level education. One-sixth of African American older adults lived in households that were not fully food-secure. In comparison, one in twenty Caucasians lived in not fully food-secure households.

A lower percent of African Americans than Caucasians were married (35.8% vs. 60.5%), and about a fifth of African Americans were either divorced or separated (Table 1). About a third of the older adults in each race group were widowed. Home ownership was higher among Caucasians than African Americans. More than 80% of Caucasians owned their homes and only one-tenth rented homes. In comparison, only about 67% of African Americans owned homes, and about one-third lived in rented homes. About two-thirds of adults in each group lived in detached one-family houses. Less than one-third lived in one-family houses that were attached to another house.

African American males consumed 328 fewer calories than did Caucasian males, and African American females consumed 254 fewer calories

**TABLE 1** Socioeconomic Characteristics of Caucasians and African Americans Aged 65 Years and Older: The NHANES, 1999–2002

Characteristics	Within-Race Distribution Weighted % (95% CI*)	
	Caucasians (N = 1,398)	African Americans (N = 354)
Sex:		
Males	42.8 (40.7–44.9)	41.1 (36.3–46.0)
Females	57.2 (55.1–59.3)	58.9 (54.0–63.7)
Household income:		
Low: Less than 131% of poverty	21.3 (16.3–27.2)	40.4 (32.0–49.5)
Medium: 131% to 350% of poverty	48.8 (45.0–52.6)	42.9 (36.3–49.9)
High: Over 350% of poverty	30.0 (25.3–35.0)	14.6 (12.4–22.0)
Education:		
Less than high school	28.2 (25.8–30.7)	41.3 (32.9–50.2)
High school/GED	48.4 (44.9–51.8)	46.4 (36.9–56.3)
Above high school	23.5 (20.7–26.5)	12.3 (8.6–17.2)
Household food security:		
Fully food secure	95.1 (93.4–96.3)	84.5 (76.0–90.4)
Marginally food secure	2.3 (1.6–3.3)	5.6 (3.0–10.1)
Food insecure without hunger	1.5 (0.9–2.6)	5.0 (2.3–10.7)
Food insecure with hunger	1.1 (0.7–1.8)	5.0 (2.4–9.9)
Marital status†:		
Married	60.5 (56.3–64.6)	35.8 (30.2–41.9)
Widowed	30.1 (26.5–34.0)	38.0 (32.1–44.1)
Divorced	6.4 (5.1–8.1)	15.4 (12.0–19.4)
Separated	0.6 (0.3–1.2)	4.6 (1.9–10.9)
House type:		
Detached one-family house	70.1 (63.6–75.8)	63.7 (50.1–75.4)
One-family house attached to another house	9.2 (6.2–13.4)	7.4 (3.7–14.1)
Apartment	11.0 (7.9–15.2)	23.9 (13.3–39.1)
Mobile home or trailer	8.3 (6.0–11.4)	4.6 (2.1–10.0)
Home ownership status:		
Owned or being bought	85.1 (81.2–88.3)	67.3 (53.5–78.7)
Rented	13.3 (10.1–17.3)	31.5 (20.1–45.7)
Other arrangements	1.7 (1.1–2.5)	1.2 (0.5–3.2)

\*CI indicates confidence interval. Percentages are significantly different at  $p < 0.05$ , if 95% CIs do not overlap.

†Never married, living with a partner, and refused are not reported under this category.

than did Caucasian females (Table 2). African American males and females had lower intakes of carbohydrate, dietary fiber, total fat, saturated fat, protein, mono- and polyunsaturated fat, calcium, phosphorus, magnesium, and potassium than their respective counterparts.

These differences in macronutrient intakes between the races continued to persist in the regression models that controlled for age, sex, and household income variations. Overall, African Americans consumed 271 kilocalories less than Caucasians. They also consumed lower amounts carbohydrate (41 g), dietary fiber (3.5 g), total fat (12 g), and protein (8 g) than Caucasians.

**TABLE 2** Mean Energy and Macronutrient Intakes of Caucasians and African Americans Aged 65 Years and Older: The NHANES, 1999–2002

	Males unadjusted means (95% CI*)		Females unadjusted means (95% CI*)		Means adjusted for age, gender and household income (95% CI*)	
	African Americans		African Americans		African Americans	
	Caucasians	African Americans	Caucasians	African Americans	Caucasians	African Americans
Energy (kilocalories)	2032 (1979–2084)	1704 (1572–1835)	1529 (1475–1583)	1275 (1193–1358)	1743 (1709–1777)	1472 (1412–1532)
Carbohydrate (g)	251 (243–258)	213 (193–232)	197 (186–206)	167 (155–177)	220 (214–226)	189 (179–199)
Dietary fiber (g)	18.2 (17.3–19.0)	14.0 (12.3–15.7)	14.4 (13.4–15.3)	10.7 (9.6–11.8)	15.9 (15.2–16.8)	12.4 (11.2–12.8)
Total fat (g)	77 (74–80)	62 (55–68)	58 (56–60)	46 (42–50)	66 (64–68)	54 (51–57)
Saturated fatty acids (g)	24.8 (23.8–25.9)	19.6 (17.3–21.9)	18.2 (17.4–19.0)	13.8 (12.3–15.4)	21.0 (20.7–21.6)	16.5 (15.4–17.6)
Monounsaturated fatty acids (g)	28.5 (27.4–29.6)	23.9 (21.3–26.5)	20.9 (19.9–21.8)	17.4 (15.7–19.0)	24.1 (23.1–25.1)	20.3 (19.1–21.5)
Polyunsaturated fatty acids (g)	15.9 (15.1–16.8)	12.6 (11.2–13.9)	13.1 (12.5–13.7)	12.6 (11.2–13.9)	14.3 (13.7–14.9)	11.8 (11.2–12.4)
Protein (g)	80 (78–82)	69 (64–76)	59 (57–61)	52 (49–55)	68 (67–70)	60 (57–63)
Calcium (mg)	860 (817–903)	533 (454–611)	692 (656–729)	437 (403–471)	763 (736–790)	494 (454–534)
Phosphorus (mg)	1329 (1292–1365)	1013 (9926–1099)	1003 (968–1037)	747 (709–787)	1141 (1119–1163)	875 (832–918)
Magnesium (mg)	307 (296–318)	224 (203–246)	232 (221–243)	177 (162–192)	264 (256–272)	201 (189–213)
Potassium (mg)	3031 (2945–3117)	2275 (2114–2435)	2374 (2264–2485)	1788 (1670–1906)	2652 (2576–2728)	2032 (1922–2142)

\*CI indicates confidence interval. Means are significantly different at  $p < 0.05$ , if 95% CIs do not overlap.





- <sup>1</sup>Meat, poultry, fish, and eggs group includes beef, pork, lamb, veal, game, organ meat, frankfurters, sausages, luncheon meats, poultry, fish, shellfish, whole eggs, egg whites, egg yolks, egg substitutes, and mixtures having meat, poultry, fish, or egg as a main ingredient. This group excludes meat, poultry, fish, and eggs that are ingredients in food mixtures coded as a single item and tabulated under another food group.
- <sup>2</sup>Total milk and milk products group includes milk and milk drinks, yogurt, milk desserts, cheese, fluid and whipped cream, half-and-half, sour cream, and milk sauces. This group excludes butter, nondairy sweet cream, sour cream substitutes. It excludes milk and milk products that are ingredients in food mixtures coded as a single item and tabulated under another food group.
- <sup>3</sup>Total vegetables group includes potatoes, dark green and deep yellow vegetables, tomatoes, lettuce, green beans, corn, green peas, lima beans, other vegetables, mixtures having vegetables as main ingredients, and vegetables juices. This group excludes vegetables that are ingredients in food mixtures codes as a single item and tabulated under another food group.
- <sup>4</sup>Total fruits and fruit juices group includes citrus fruits and juices, dried fruits, other non-citrus fruits, non-citrus fruit juices and nectars, and mixtures having fruit as a main ingredient. This group excludes fruits that are ingredients in food mixtures coded as a single item and tabulated under another group.
- <sup>5</sup>Nuts, seeds, and legumes group includes raw, roasted, and honey roasted nuts and peanuts; coconut; peanut butter; peanut sandwiches coded as a single item; nut mixtures; and raw and roasted seeds. This group excludes nuts and seeds that are ingredients that are ingredients in food mixtures coded as a single item and tabulated under another food group.
- <sup>6</sup>Total fats and oils group includes table fats, cooking fats, salad dressings, nondairy cream substitutes, and sauces that are mainly fat or oil. This group excludes fats or oils that are ingredients that are ingredients in food mixtures coded as a single item and tabulated under another food group. For example, fats or oils used to fry chicken are tabulated under meat, poultry, fish, and eggs group.
- <sup>7</sup>Total alcoholic and nonalcoholic beverages group includes alcoholic and nonalcoholic beverages. This group excludes tap water and non-carbonated bottled water and beverages that are ingredients that are ingredients in food mixtures coded as a single item and tabulated under another food group.

There were notable differences in micronutrient intakes between the two groups. African Americans had consistently lower intakes of micronutrients; they consumed 269 mg calcium, 266 mg phosphorus, 53 mg magnesium, and 633 mg potassium less than Caucasians.

Despite differences in the macronutrient intakes, there were no differences between the races in their mean percentages of total energy from carbohydrate and fat (data not shown). Males from each race obtained 51% of total energy from carbohydrate, 33.1% from total fat, and 10.8% from saturated fat. These percentages for women were, 52%, 32.8%, and 10.5%, respectively. The mean percentage of total energy from total fat was within the dietary guidelines' recommended levels and percent total energy from saturated fat was above the recommendation (36,37). Further analyses showed that African American and Caucasian men consumed 8.1 g and 9.2 g of dietary fiber per 1,000 kilocalories, respectively, and the women consumed 8.7 g and 9.7 g of dietary fiber per 1,000 kilocalories, respectively (data not shown). Although Caucasians had a higher dietary fiber intake than African Americans, overall, both races had inadequate fiber intakes.

Table 3 includes mean food group intakes and percentage of total energy from respective food groups. Caucasian men and women consumed more than twice the amount of milk and milk products than was consumed by their African American counterparts. They also drank more alcoholic and nonalcoholic beverages than African Americans. No statistical differences were seen in within-sex comparisons between the races in their mean grains; meat, fish, and poultry; fruits; nuts, seeds, and legumes; and total fats and oils intakes.

Total grain products were the top source of energy for men and women in both races, and provided about a third of the day's energy. The meat, poultry, fish, and eggs group was the second-highest energy provider. However, African Americans obtained about one-fourth and Caucasians about one-fifth of the day's energy from this group. Caucasians obtained more energy (about 12%) from the milk and milk products group than African Americans (about 7–8%). The total vegetables and the total fruits and fruit juice groups, each provided less than one-tenth of the day's energy. Nuts, seeds, and legumes, and total oils groups, combined, provided about a tenth of total energy. African Americans, despite drinking smaller amounts of total beverages than Caucasians, obtained a higher proportion of total energy from beverages. The total beverages group was the third highest energy source in African Americans' diets.

Further analysis of beverage consumption patterns of the two races showed that African Americans drank more nondiet soft drinks (138 g vs. 100 g) and fruit drinks (107 g vs. 45 g) than Caucasians. These beverages, being high in added sugar, were sources of energy but were low in essential micronutrients. Caucasians drank higher amounts of coffee (356 g vs. 174 g),

tea (161 g vs. 102 g), low-calorie soft drinks (91 g vs. 46 g), and alcoholic beverages (76 g vs. 37 g) than African Americans.

Overall, Caucasians were more physically active than African Americans (Table 4). About half the African Americans stated that they mostly sat during the day and did not walk about very much. In comparison, about a fourth of Caucasians stated that they were sedentary. Twice as many Caucasians than African Americans (15% vs. 7%) said that they lifted light loads or had to climb stairs often. In addition, a higher percentage of Caucasians (53% vs. 38%) reported that compared with persons of similar age and sex, they were more active.

The sedentary lifestyle of a high percentage of African Americans was also reflected in more of them watching five hours or more of television on a typical day (Table 4). About one-third of African Americans and one-fifth of Caucasians watched five or more hours of television a day. In general,

**TABLE 4** Lifestyle and Health Status of Caucasians and African Americans Aged 65 years and Older: The NHANES, 1999–2002

Characteristics	Within-race distribution weighted % (95% CI*)	
	Caucasians	African Americans
Daily Activity Level <sup>†</sup>		
Mostly sit during the day, not walk about very much	28 (25–31)	48 (40–56)
Stands or walks about a lot during the day, but does not carry or lift things very often	55 (52–58)	45 (38–52)
Lifts light load or has to climb stairs or hills often	15 (12–17)	7 (4–10)
Compared with persons of similar age/gender:		
More active	53 (49–56)	38 (33–43)
Less active	13 (11–15)	21 (17–26)
About the same	34 (31–37)	41 (37–46)
Number of hours TV watched on a typical day <sup>‡</sup> :		
Less than 1 hour	8 (6–10)	10 (8–12)
1–2 hours	35 (32–37)	25 (21–29)
3–4 hours	38 (34–42)	31 (27–36)
5 or more hours	20 (17–22)	34 (29–39)
Smoking status:		
Current cigarette smoker	9 (7–11)	14 (10–18)
Current cigar smoker	10 (8–11)	6 (4–8)
Health status: Ever told by a doctor that you		
Have diabetes	4 (3–6)	10 (7–14)
Have high blood pressure	52 (49–54)	67 (62–72)
Have high blood cholesterol	45 (42–48)	32 (28–36)

\*CI indicates confidence interval (CI). Percentages are significantly different at  $p < 0.05$ , if 95% CIs do not overlap.

<sup>†</sup>Does heavy work or carries heavy loads category is not included.

<sup>‡</sup>Includes adults watching videos or using a computer outside of work.

**TABLE 5** Mean Body Mass Index and Percentage of Overweight Caucasians and African Americans Aged 65 Years and Older: The NHANES, 1999–2002

Body weight status	Caucasians	African Americans
Males:		
N	703	177
Body mass index (kg/m <sup>2</sup> )	27.9 (27.1–28.7)*	27.6 (26.8–28.4)*
Percent <sup>†</sup> overweight (BMI ≥ 25)	69.3 (66.1–72.5)*	62.7 (54.9–70.5)*
Females:		
N	689	177
Body mass index (kg/m <sup>2</sup> )	27.7 (27.1–28.3)*	30.9 (29.7–32.1)*
Percent <sup>†</sup> overweight (BMI ≥ 25)	59.7 (55.7–53.7)*	75.1 (69.3–80.9)*

\*Statistics within parentheses indicate 95% confidence intervals (CI). Means/percentages are significantly different at  $p < 0.05$ , if 95% CIs do not overlap.

<sup>†</sup>Percentages are weighted to represent U.S. population aged 65 years and older.

more than half the adults in each race watched at least three hours of television on a typical day.

One-fifth of adults in each race were current smokers (Table 4). Significant differences existed in the health status between the races. More African Americans reported having been told by a doctor that they had diabetes (10% vs. 4%) or high blood pressure (67% vs. 52%), and more Caucasians (45% vs. 32%) reported having been told by a doctor that they had high blood cholesterol.

Among women, African Americans had higher mean BMIs than Caucasians (Table 5). However, mean BMI values of both races were in the overweight range. Moreover, about three-fourths of African American women and more than half the Caucasian women were overweight. No statistical differences were noted in mean BMI and percent overweight between men in the two races.

## DISCUSSION

Our findings emphasize the need for improving food security among older adults, especially among older African Americans. According to the American Association of Retired Persons (AARP) (38), the poverty rate (household income below 100% of poverty) for African Americans aged 65 years and older is more than twice that of all persons in this age group (23.9% vs. 10.4%) and the corresponding statistics are 33.5% and 17.0% for the income group below 125% of poverty, respectively. In this study, a similar proportion was noted between African Americans and Caucasians (40.4% vs. 21.3%) with an income below 131% of poverty. One may generalize that older African Americans, as compared with other older persons, are almost twice as likely to live in poverty and to live in households that may be eligible to participate in federal food assistance programs. Persons with incomes

below 131% of poverty are eligible to receive food stamps provided they meet other eligibility requirements (3).

About 40% of African Americans had less than a high school level education. Low education restricts an individual's earning potential and low income may reduce money available for food expenditures. The NHANES 1999–2002 did not collect data on food expenditure and the reasons for reported food insecurity.

Only about a third of African Americans reported being married. Marital status can influence economic status and emotional status and thereby can influence dietary and nutritional status. African American males and females in this study had substantially lower energy intakes than their Caucasian counterparts. Quandt and colleagues found that widowhood or living alone is more likely to have negative effects on nutrition through inadequate food and energy intakes, meal skipping, reduced home food production, and less dietary variety on elderly women (39). Charlton reviewed work indicating that low income older American males living alone were at high risk for low energy intake and poor diet quality (40).

The low energy intake of African Americans points to their inadequate dietary intake and food-security status. With their high regular soft drink and fruit drink intakes, they obtained a high proportion of total energy from these low-nutrient, high-energy beverages. These beverages are relatively cheap and thus serve as affordable energy sources to low income persons. This reasoning is supported by Drewnowski and Spector's findings (33) of an inverse relationship between energy density (kcal/1,000 g) of foods and energy cost (dollars/1,000 g) of foods. Thus, foods high in refined grains, added sugars, or fats may represent the lowest-cost options to the consumer (35).

Because of their choice of beverages and low intakes of milk, fruits, and vegetables, African Americans' calcium, phosphorus, magnesium, and potassium intakes were low and were far below that of Caucasians. At older ages, when good nutrition is critical to the prevention of chronic disease such as obesity, hypertension, and type 2 diabetes (36,41–45); cognitive decline (46,47); and disability, African American had lower intakes of nutrient-dense foods such as milk products, fruits, and vegetables than Caucasians. This is of particular concern because eating a variety of foods that are micronutrient-dense is essential to prevent micronutrient deficiencies (48,49) and related health problems in later life.

Despite the high prevalence of food insecurity and low energy intakes among African Americans, 75% of women and 63% of men were overweight. A lack of food security has been associated with overweight in men and women (50,51). Low physical activity in combination with many hours of television watching was observed among African Americans. Time spent watching television has been directly associated with increased risk for obesity, cardiovascular disease, metabolic syndrome, or type 2 diabetes in adults (52–55). A third of African Americans watched five or more hours of

television per day and half of them reported that they mostly sat during the day. More African Americans than Caucasians had diabetes or hypertension; the risk of diabetes among African Americans has been previously noted (56). Al Snih and colleagues' work using NHANES III 1988–1994 data showed that being African American, female, having low education, high BMI, diabetes, and stroke were associated with decreased physical performance in older Americans (57).

Lifestyle interventions aimed at older adults should include both nutrition and weight management components. While energy restriction is necessary in weight management, it should not be implemented at the cost of decreased nutritional quality. Reducing intakes of high-energy, low-nutrient beverages would be a strategy to reduce energy intake without compromising diet quality. However, not all older adults need energy restriction. Older adults with inadequate energy intakes may consume more nutritious snacks and beverages and soups. The mean percentage of calories from saturated fat was at or above the recommended level for both groups. Choosing lean meat and low-fat dairy foods would reduce saturated fat intakes and increase nutritional quality of the overall diet. Choosing whole grain products over refined grains and eating more vegetables and fruit would increase intakes of fiber and many essential micronutrients. Older adults should be encouraged to reduce television time and to engage in activities according to their physical ability; e.g., easy-to-do household chores, walking, stretching, and yoga. Physical activity has been shown to enhance quality of life in older adults (58).

The literature on diet and physical activity status among older adults from diverse ethnic groups is sparse and more research work is needed in this area. Because of the continuing increase in life expectancy (1), it is essential to monitor changes in diet, physical activity, and health status of older adults so that timely, target-specific interventions can be developed. Such interventions will help maintain high quality of life for older adults and will help reduce future health care costs. The NHANES is continuous and will facilitate such future assessments.

### TAKE AWAY POINTS

- Despite increasing incomes among older adults in the recent years (1), a significant proportion of the older African American population lives at or near poverty and in not fully food-secure households. This underscores the need for increased food assistance and food access among this group.
- Older African American women especially are at high risk for obesity-related chronic disease and reduced quality of life.
- Interventions aimed at older adults should simultaneously promote dietary changes, increased physical activity, and decreased television time.

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